

Hello Examiner Gergiso,

Please find attached hereto a proposed Examiner's Amendment that incorporates the amendments we discussed yesterday. Particularly, it amends independent Claims 1, 10, 19, 28, to include the features of respective ones of Claims 4, 13, 22 and 31. It then cancels dependent Claims 4, 13, 22 and 31 and correspondingly amends the dependencies of Claims 5, 8, 14, 17, 23, 26, 32 and 35.

Please let me know if you have any questions or comments; otherwise, the attached is approved for entry as an Examiner's Amendment to place the application in condition for allowance.

Thanks,

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.:	10/689,396	Confirmation No.:	2878
Applicant(s):	Salo et al.		
Filed:	October 20, 2003		
Art Unit:	2437		
Examiner:	Gergiso, Techane		
Title:	SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR DOWNLOADING PUSHED CONTENT		

Docket No.: 042933/269778
Customer No.: 00826

PROPOSED EXAMINER'S AMENDMENT

Amendments to the Claims:

1. (Currently Amended) A system comprising:
a terminal comprising a processor configured to receive service loading content that identifies download content and has a digital signature, wherein the processor is configured to authenticate the service loading content based upon the digital signature, and when the service loading content is authenticated, pull the download content to the terminal, wherein the processor is configured to authenticate the service loading content, and pull the download content, in response to receiving the service loading content and independent of interaction from a user of the terminal, and wherein the processor is configured to determine when an interruption occurs in pulling the download content such that the terminal receives a portion but less than all of the download content, and when an interruption occurs in receiving the content, recover the

download content including receiving a remaining portion of the download content without also receiving at least part of the previously received portion; and

an origin server associated with the download content, wherein the service loading content identifies the origin server associated with the download content, wherein the processor of the terminal is configured to send a request for the download content to the origin server when the service loading content is authenticated, and wherein the processor is configured to receive the download content from the origin server in response to the request.

2. (Previously Presented) The system according to Claim 1, wherein the processor of the terminal is configured to verify the digital signature with a public key to thereby authenticate the service loading content.

3. (Previously Presented) The system according to Claim 2 further comprising:
a push initiator configured to digitally sign the service loading content with a private key associated with the public key, and thereafter transmit the service loading content to the terminal.

4. (Cancelled)

5. (Currently Amended) The system according to Claim-~~4~~1, wherein the processor of the terminal is configured to operate a download agent, wherein the download agent is configured to receive a download descriptor, and thereafter receive the download content.

6. (Previously Presented) The system according to Claim 5, wherein the download content comprises a plurality of data packets, and wherein the download agent is configured to determine when an interruption occurs in receiving the plurality of data packets such that the download agent receives less than the plurality of data packets of the download content, and when an interruption occurs in receiving the plurality of data packets, recover the download content such that the download agent receives the plurality of data packets.

7. (Previously Presented) The system according to Claim 6, wherein the download agent is further configured to determine at least one remaining data packet to be received by the download agent to thereby complete reception of the plurality of data packets of the download content, instruct the origin server to send the at least one remaining data packet, and receive the at least one remaining data packet such that the download agent receives the plurality of data packets.

8. (Currently Amended) The system according to Claim-4 1, wherein the download content comprises a plurality of data packets, and wherein the processor of the terminal is configured to operate a download agent configured to receive the plurality of data packets and receive at least one information packet regarding at least one group of at least one data packet.

9. (Previously Presented) The system according to Claim 8, wherein the download agent is configured to monitor the received data packets to determine, based upon at least one information packet, when an interruption occurs in receiving the plurality of data packets such that the download agent receives less than the plurality of data packets of the download content, and wherein the download agent is configured to recover the download content such that the download agent receives the plurality of data packets when an interruption occurs in receiving the plurality of data packets.

10. (Currently Amended) A method comprising:
directing receipt of service loading content at a terminal, wherein the service loading content identifies download content and has a digital signature;
authenticating the service loading content based upon the digital signature; and
directing pulling of the download content to the terminal when the service loading content is authenticated, wherein the service loading content is authenticated, and the download content is pulled, in response to receipt of the service loading content and independent of interaction from a user of the terminal,

wherein directing pulling of the download content includes determining when an

interruption occurs in pulling the download content such that the terminal receives a portion but less than all of the content, and when an interruption occurs in receipt of the content, directing recovery of the download content including directing receipt of a remaining portion of the download content without also directing receipt of at least part of the previously received portion, wherein the service loading content identifies an origin server associated with the download content, and wherein directing pulling of the download content comprises:

directing sending of a request for the download content to the origin server when the service loading content is authenticated; and

directing receipt of the download content at the terminal from the origin server in response to the request.

11. (Previously Presented) The method according to Claim 10, wherein authenticating the service loading content comprises verifying the digital signature with a public key.

12. (Previously Presented) The method according to Claim 11, wherein directing receipt of service loading content comprises directing receipt of digitally-signed service loading content, the service loading content having been digitally signed with a private key associated with the public key.

13. (Cancelled)

14. (Currently Amended) The method according to Claim ~~13~~ 10, wherein directing receipt of the download content comprises directing receipt of a download descriptor, and thereafter the download content.

15. (Previously Presented) The method according to Claim 14, wherein the download content comprises a plurality of data packets, wherein determining when an interruption occurs comprises determining when an interruption occurs in receipt of the plurality of data packets

such that the terminal receives less than the plurality of data packets of the download content, and wherein directing recovery of the download content comprises directing recovery of the download content such that the terminal receives the plurality of data packets.

16. (Previously Presented) The method according to Claim 15, wherein directing recovery of the download content comprises:

determining at least one remaining data packet to be received at the terminal to thereby complete reception of the plurality of data packets of the download content;

instructing the origin server to send the at least one remaining data packet; and

directing receipt of the at least one remaining data packet such that the terminal receives the plurality of data packets.

17. (Currently Amended) The method according to Claim ~~13~~ 10, wherein the download content comprises a plurality of data packets, and wherein directing receipt of the download content comprises directing receipt of the plurality of data packets and at least one information packet regarding at least one group of at least one data packet.

18. (Previously Presented) The method according to Claim 17, wherein directing receipt of the plurality of data packets further comprises:

monitoring the received data packets to determine, based upon at least one information packet, when an interruption occurs in receipt of the plurality of data packets such that the terminal receives less than the plurality of data packets of the download content; and when an interruption occurs in receipt of the plurality of data packets,

directing recovery of the download content such that the terminal receives the plurality of data packets.

19. (Currently Amended) A computer program product comprising at least one computer-readable storage medium having computer-readable program code portions stored therein that in response to execution by a processor cause an apparatus to at least perform the

following:

directing receipt of service loading content, wherein the service loading content identifies download content and has a digital signature;

authenticating the service loading content based upon the digital signature; and

directing pulling of the download content when the service loading content is authenticated, wherein the service loading content is authenticated, and the download content is pulled, in response to receipt of the service loading content and independent of interaction from a user of the apparatus,

wherein directing pulling of the download content includes determining when an interruption occurs in pulling the download content such that the apparatus receives a portion but less than all of the content, and when an interruption occurs in receipt of the content, directing recovery of the download content including directing receipt of a remaining portion of the download content without also directing receipt of at least part of the previously received portion, wherein the service loading content identifies an origin server associated with the download content, and wherein directing pulling of the download content comprises:

directing sending of a request for the download content to the origin server when the service loading content is authenticated; and

directing receipt of the download content at the apparatus from the origin server in response to the request.

20. (Previously Presented) The computer program product according to Claim 19, wherein authenticating the service loading content comprises verifying the digital signature with a public key to thereby to authenticate the service loading content.

21. (Previously Presented) The computer program product according to Claim 20, wherein directing receipt of service loading content comprises directing receipt of digitally-signed service loading content, the service loading content having been digitally signed with a private key associated with the public key.

22. (Cancelled)

23. (Currently Amended) The computer program product according to Claim ~~22~~ 19, wherein directing receipt of the download content comprises directing receipt of a download descriptor, and thereafter the download content.

24. (Previously Presented) The computer program product according to Claim 23, wherein the download content comprises a plurality of data packets, wherein determining when an interruption occurs comprises determining when an interruption occurs in receipt of the plurality of data packets such that the apparatus receives less than the plurality of data packets of the download content, and wherein directing recovery of the download content comprises directing recovery of the download content such that the apparatus receives the plurality of data packets.

25. (Previously Presented) The computer program product according to Claim 24, wherein directing recovery of the download content comprises:

- determining at least one remaining data packet to be received at the apparatus to thereby complete reception of the plurality of data packets of the download content;
- instructing the origin server to send the at least one remaining data packet; and
- directing receipt of the at least one remaining data packet such that the apparatus receives the plurality of data packets.

26. (Currently Amended) The computer program product according to Claim ~~22~~ 19, wherein the download content comprises a plurality of data packets, and wherein directing receipt of the download content comprises directing receipt of the plurality of data packets and at least one information packet regarding at least one group of at least one data packet.

27. (Previously Presented) The computer program product according to Claim 26, wherein directing receipt of the plurality of data packets further comprises:

monitoring the received data packets to determine, based upon at least one information packet, when an interruption occurs in receipt of the plurality of data packets such that the apparatus receives less than the plurality of data packets of the download content; and when an interruption occurs in receipt of the plurality of data packets,

directing recovery of the download content such that the apparatus receives the plurality of data packets.

28. (Currently Amended) An apparatus comprising a processor and a memory storing executable instructions that in response to execution by the processor cause the apparatus to at least perform the following:

directing receipt of service loading content, wherein the service loading content identifies download content and has a digital signature;

authenticating the service loading content based upon the digital signature; and

directing pulling of the download content when the service loading content is authenticated, wherein the service loading content is authenticated, and the download content is pulled, in response to receipt of the service loading content and independent of interaction from a user of the apparatus,

wherein directing pulling of the download content includes determining when an interruption occurs in pulling the download content such that the apparatus receives a portion but less than all of the content, and when an interruption occurs in receipt of the content, directing recovery of the download content including directing receipt of a remaining portion of the download content without also directing receipt of at least part of the previously received portion, wherein the service loading content identifies an origin server associated with the download content, and wherein directing pulling of the download content comprises:

directing sending of a request for the download content to the origin server when the service loading content is authenticated; and

directing receipt of the download content at the apparatus from the origin server in response to the request.

29. (Previously Presented) The apparatus according to Claim 28, wherein authenticating the service loading content comprises verifying the digital signature with a public key.

30. (Previously Presented) The apparatus according to Claim 29, wherein directing receipt of service loading content comprises directing receipt of digitally-signed service loading content, the service loading content having been digitally signed with a private key associated with the public key.

31. (Cancelled)

32. (Currently Amended) The apparatus according to Claim ~~31~~ 28, wherein directing receipt of the download content comprises directing receipt of a download descriptor, and thereafter the download content.

33. (Previously Presented) The apparatus according to Claim 32, wherein the download content comprises a plurality of data packets, wherein determining when an interruption occurs comprises determining when an interruption occurs in receipt of the plurality of data packets such that the apparatus receives less than the plurality of data packets of the download content, and wherein directing recovery of the download content comprises directing recovery of the download content such that the apparatus receives the plurality of data packets.

34. (Previously Presented) The apparatus according to Claim 33, wherein directing recovery of the download content comprises:

determining at least one remaining data packet to be received at the apparatus to thereby complete reception of the plurality of data packets of the download content;

instructing the origin server to send the at least one remaining data packet; and

directing receipt of the at least one remaining data packet such that the apparatus receives the plurality of data packets.

35. (Currently Amended) The apparatus according to Claim ~~34~~ 28, wherein the download content comprises a plurality of data packets, and wherein directing receipt of the download content comprises directing receipt of the plurality of data packets and at least one information packet regarding at least one group of at least one data packet.

36. (Previously Presented) The apparatus according to Claim 35, wherein directing receipt of the plurality of data packets further comprises:

monitoring the received data packets to determine, based upon at least one information packet, when an interruption occurs in receipt of the plurality of data packets such that the apparatus receives less than the plurality of data packets of the download content; and when an interruption occurs in receipt of the plurality of data packets,

directing recovery of the download content such that the apparatus receives the plurality of data packets.